NOTICE

FCC NOTICE

INDUSTRY CANADA NOTICE

VCCI NOTICE

CLASS A ITE NOTICE

DECLARATION OF CONFORMITY

Application of Council Directive(s):	**89/336/EEC** **73/23/EEC**
Manufacturer's Name:	**Enterasys Networks, Inc.**
Manufacturer's Address:	**35 Industrial Way** **PO Box 5005** **Rochester, NH 03867**
European Representative Name:	**Mr. Jim Sims**
European Representative Address:	**Enterasys Networks Ltd.** **Nexus House, Newbury Business Park** **London Road, Newbury** **Berkshire RG14 2PZ, England**
Conformance to Directive(s)/ Product Standards:	**EC Directive 89/336/EEC** **EC Directive 73/23/EEC** **EN 55022** **EN 55024** **EN 60950** **EN 60825**
Equipment Type/Environment:	**Networking Equipment, for use in a Commercial or Light Industrial Environment.**

Enterasys Networks, Inc. declares that the equipment packaged with this notice conforms to the above directives.

AGENCY STANDARDS

Safety

Meets the requirements of UL 1950, CSA C22.2 No. 950, EN 60950, IEC 950, and 73/23/EEC.

Electromagnetic Compatibility

Compliant with the requirements of FCC Part 15, CSA C108.8, EN 55022, VCCI Class A, EN 50082-1, and 89/336/EEC.

ER16-FDDI-02

The ER16-FDDI-02 module supports high-performance translation from Ethernet, Fast Ethernet, Gigabit Ethernet, and ATM to FDDI, as well as connectivity between FDDI modules. IP Fragmentation support allows the module to fragment FDDI frames into multiple, smaller Ethernet frames. MTU path discovery support allows the module to transport the maximum size of packet to its end destination. FDDI full-duplex support is available for point to point connections with only two stations on a FDDI ring that support full duplex. The ER16-FDDI-02 module also supports the ring and DEC ring purger protocols, an extension to the FDDI specification.

SPECIFICATIONS

Ports
2 Port FDDI Base Module

ASIC Type
T-Series

Network Interfaces
XP-FPHY-01 MMF DAS
XP-FPHY-02 UTP SAS
XP-FPHY-09 SMF DAS

Number of Flows/Routes
Up to 128,000 Layer-2 entries per port
Up to 256,000 Layer-3/4 entries

Queue Buffer
Packet memory size: 8MB

Physical Dimensions
Size: 52.9 cm H x 5.5 W x 40.1 D (20.9 in. H x 2.17 W x 15.8 D)
Weight: 1.4 kg (3.0 lbs)

Power Consumption
BTU/hr = 203.14
AC Volt Amps = 60.12

Temperature
Operating: 41° to 104° F (5° to 40° C)
Storage: -22° to 164° F (-30° to 73° C)

Humidity
5% to 90% (non-condensing)

CONNECTIVITY GUIDELINES
Table 1 Recommended Cable Types and Specifications

Cable	Type	Max. Length	Connector
FDDI Copper	Cat. 3, 4, 5 100-ohm UTP	100 m (328 ft)	RJ45 (XP-FPHY-02)
Multi-mode Fiber	62.5/125	2 km (1.24 mi)	SC (XP-FPHY-01)
Single-mode Fiber	10/125	30 km (18.64 mi)	SC (XP-FPHY-09)

OPTICS
Table 2 Receiver/Transmitter

Receiver Sensitivity	MMF	SMF
Minimum	-34 dBm	-33 dBm
Maximum	-31 dBm	-3 dBm

Transmit Power	MMF	SMF
Minimum	-20 dBm	-8 dBm
Maximum	-14 dBm	-3 dBm

Table 3 Links

Link Power Budget	
MMF	11 dB
SMF	>10 dB

LEDs
Table 4 LED Indicators

LED	Condition				Status
Rx	Off				No activity
	Flashing Yellow				Activity
	Red				Diagnostic failure
Tx	Off				No activity
	Flashing Green				Activity
	Blinking Yellow				Port on standby
	Red				Diagnostic failure
Primary/Secondary Port LEDs (A, B, P, S)	**A**	**B**	**P**	**S**	
	Yellow	Yellow	Off	Off	Port enabled, not active
	Off	Off	Off	Off	Ports disabled
	Green	Green	Off	Off	Ports enabled
	Green	Green	Green	Off	THRU A
	Green	Green	Off	Green	THRU B
	Green	Off	Green	Yellow	WRAP A
	Off	Green	Green	Yellow	WRAP B
	Green	Green	Green	Yellow	WRAP AB
	Green	Off	Green	Off	WRAP S (in S mode)
	Green	Green	Off	Off	BYPASS Board
	Green	Green	Red	Red	TWISTED A-A, B-B
	Red	Red	Red	Red	Diagnostic Failure

INSTALLING THE MODULE

⚡ **ELECTRICAL HAZARD:** Only qualified personnel should perform installation procedures.

Handling the Module

⚠ **CAUTION:** The ER16-FDDI-02 is easily damaged by electrostatic discharge.

To prevent electrostatic damage, observe the following guidelines:
- Do not remove the module from its packaging until you are ready to install it.
- Do not touch any of the module's pins, connectors or components.
- Hold the module only by its edges or front panel.
- Wear an anti-static wristband connected to a suitable earth ground whenever handling the module.
- Store or transport this module only in appropriate anti-static packaging.
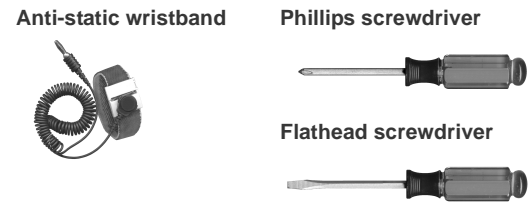
Equipment Checklist

After unpacking the ER16-FDDI-02, check the contents of the box to be sure you received the following items:

- One ER16-FDDI-02 module in anti-static bag
- One disposable anti-static wristband

Tools

This installation requires the following tools:

Anti-static wristband   **Phillips screwdriver**

Flathead screwdriver

Preliminary Setup

Firmware Image Requirements

Version 8.3.0.0 or later.

Preparing the Module

- Before installing the module, you must install at least one of the following XP-FPHYs (purchased separately): XP-FPHY-01, XP-FPHY-02, or XP-FPHY-09.

Connector Pin Assignments

The connector pins are assigned as follows:

Table 5   DB9-RS232 Console Port Pin Assignments

Pin	Connection
1	TX +
2	TX -
3	Unused
4	Unused
5	Unused
6	Unused
7	RX +
8	RX -

Hotswap

You may install this module into a live system without powering off the device. However, do not remove an active module from a live system except under the following conditions:

- Press the **Hotswap button**. The **Online LED** will turn **off** and the **Offline LED** will turn **on**.

OR...

- **Enter the following** from the CLI and click enter: **Enable -> System -> Hotswap -> Out -> Slot -> #**. The **Online LED** will turn **off** and the **Offline LED** will turn **on**.
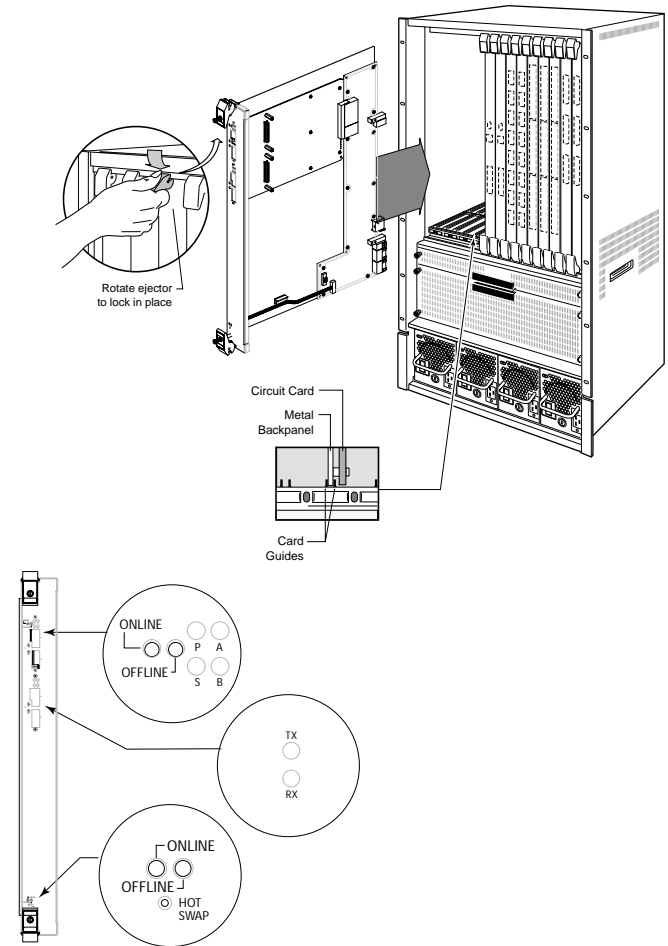
Instructions

⚠ **CAUTION:** Before performing any upgrade or installation, ensure that you are properly "grounded" to avoid electrostatic discharge. The switch must be powered off before installing or replacing any module.

1. **Open the ejectors** at the top and bottom of the module. If a cover plate is installed in the slot where you will install the ER16-FDDI-02 module, **remove the cover plate**: loosen the screws on the ejectors until the screws pop out, then open the ejectors and pull out the plate.

2. **Align the metal backpanel of the module with the card guides** at the top and the bottom of the slot opening, as shown in Figure 1.

   NOTE: Make sure that the metal backpanel of the ER16-FDDI-02—not the circuit card—is between the card guides. Check both the upper and lower tracks.

3. **Slide the ER16-FDDI-02 all the way into the slot**, firmly but gently pressing to ensure that the pins on the back of the module are completely seated in the backplane.

4. To lock the ER16-FDDI-02 into the slot, **close the ejectors**. Using a flathead screwdriver, tighten the screw on each ejector.

Figure 1   Install the FDDI Module

Rotate ejector to lock in place

Circuit Card

Metal Backpanel

Card Guides

ONLINE   P A
OFFLINE   S B

TX

RX

ONLINE
OFFLINE   ⊙ HOT SWAP

TROUBLESHOOTING

Proper Boot Sequence

- Firmware loads.
- The LEDs on Port 1 light in the following order: A, B, P, S, Rx, and Tx. After the Tx LED lights, all LEDs turn off and the online LED turns green.
- Diagnostic messages display for each line card.
- Status lights on line cards go online.
- Link lights activate for connected lines.

Common Errors

- Ensure the ER16 is powered up.
- Ensure that the device attached to the module is powered up and operating correctly.
- Ensure that the module is properly seated in the slot.
- Check the connectors on both ends of the cable to be sure they are properly engaged. When attaching fiber cable to an SC-type port, be sure the plug clicks into place to ensure that it is properly seated.
- If you are using fiber optic cable with an ST-type connector in conjunction with an SC-ST port converter, try switching the TX and RX connectors.

Helpful CLI Commands for Debugging

- **System show hardware**
- **System show version**
- **System show bootlog**

ADDITIONAL INFORMATION

For additional information about installing this module or to learn more about what capabilities are included in the firmware release you are using, visit the Enterasys Networks web site.

Getting Help

For additional support related to the Common CLI syntax or this document, contact Enterasys Networks using one of the following methods:

World Wide Web	http://www.enterasys.com/
Phone	(603) 332-9400
Internet mail	support@enterasys.com
FTP **Login** **Password**	ftp://ftp.enterasys.com anonymous your email address
To acquire the latest image for this product and any available release notes	http://www.enterasys.com/download
Additional documentation	http://www.enterasys.com/support/manuals

To send comments or suggestions concerning this document, contact the Technical Writing Department via the following email address:
TechWriting@enterasys.com
Please include the document Part Number in the email message.

Before contacting Enterasys Networks for technical support, have the following information ready:

- Your Enterasys Networks service contract number
- A description of the failure
- A description of any action(s) taken to resolve the problem (e.g., changing mode switches, rebooting the unit)
- The serial and revision numbers of all involved Enterasys Networks products in the network
- A description of your network environment (layout, cable type, etc.)
- Network load and frame size at the time of trouble (if known)

ER16-FDDI-02

Quick Start

Web Site: http://www.enterasys.com/

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